

Name: \_\_\_\_\_

**at1113exam: Expand, factor, and solve quadratics (v203)**

1. Expand the following expression into standard form.

$$(7x + 6)(7x - 6)$$

$$49x^2 - 42x + 42x - 36$$
$$49x^2 - 36$$

2. Solve the equation.

$$(9x + 5)(7x + 8) = 0$$

$$x = \frac{-5}{9} \quad x = \frac{-8}{7}$$

3. Expand the following expression into standard form.

$$(7x + 6)(9x + 2)$$

$$63x^2 + 14x + 54x + 12$$
$$63x^2 + 68x + 12$$

4. Expand the following expression into standard form.

$$(3x - 4)^2$$

$$9x^2 - 12x - 12x + 16$$
$$9x^2 - 24x + 16$$

5. Factor the expression.

$$81x^2 - 25$$

$$(9x + 5)(9x - 5)$$

6. Factor the expression.

$$x^2 - 10x + 24$$

$$(x - 4)(x - 6)$$

7. Solve the equation.

$$12x^2 + 49x + 33 = 5x^2 + 2x + 3$$

$$7x^2 + 47x + 30 = 0$$

$$(7x + 5)(x + 6) = 0$$

$$x = \frac{-5}{7} \quad x = -6$$

8. Solve the equation with factoring by grouping.

$$10x^2 + 12x + 15x + 18 = 0$$

$$(2x + 3)(5x + 6) = 0$$

$$x = \frac{-3}{2} \quad x = \frac{-6}{5}$$